

CHEMISTRY

BOOKS - ACCURATE PUBLICATION

MODEL TEST PAPER-2

Section A Mcq

1. In comparison to a 0.01 M solution of glucose, the depression in freezing point of a 0.01M $MgCl_2$ solution is :

A. the same

B. about twice

C. about three times

D. about six times

Answer:



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2. Write complete balanced equation for the following reaction : sulphur dioxide + oxygen
→ sulphur trioxide



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3. Write complete balanced equation for the following reaction : aluminium hydroxide \rightarrow aluminium oxide + water



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4. The value of Henry's constant K_H is :

A. greater for gases with higher solubility

B. greater for gases with lower solubility

C. constant for all gases

D. not related to the solubility of gases

Answer:



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5. If molality of the dilute solution is doubled, the value of molal depression constant K_f will be

A. halved

B. tripled

C. unchanged

D. doubled

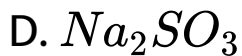
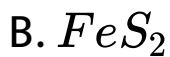
Answer:



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6. Fool's gold is known as

A. ZnS

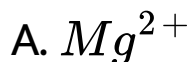


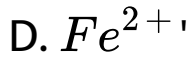
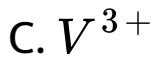
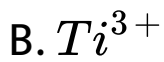
Answer:



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7. Which of the following has the maximum number of unpaired electrons?





Answer:



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8. Which of the following has magnesium?

A. Chlorophyll

B. Haemocyanin

C. Carbonic anhydrate

D. Vitamin B_{12}

Answer:



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9. Mohr's salt is





Answer:



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10. The reaction of Lucas reagent is fast with

A. ethanol

B. methanol

C. 2-propanol

D. 2-methyl-2-propanol

Answer:



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11. Acetaldehyde cannot exhibit :

- A. Tollen's test
- B. Benedict's test
- C. Lucas test
- D. Iodoform test

Answer:



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12. Base catalyzed aldol condensation occurs with

A. Propionaldehyde

B. 2,2,-dimethyl propionaldehyde

C. Benzaldehyde

D. None of the above

Answer:



13. Which of the aldehydes is most reactive towards nucleophilic addition?

A. HCHO

B. CH_3CHO

C. $C_6H_5 - CHO$

D. All are equally reactive

Answer:



14. Aldehyde and ketones cannot be distinguished by:

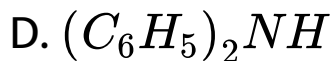
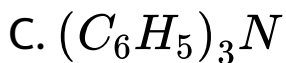
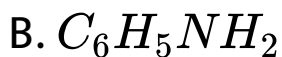
- A. Molisch's test
- B. Tollen's test
- C. Benedict's test
- D. Schiff's test

Answer:



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15. The one which is least basic is



Answer:



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16. Which one of the following is more basic?

A. Aniline

B. p-Methoxyaniline

C. p-Nitroaniline

D. Benzylamine

Answer:



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17. Which base is present in RNA but not in DNA ?

A. Guanine

B. Cytosine

C. Uracil

D. Thymine

Answer:



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18. The secondary structure of a protein refers to

- A. fixed configuration of the polypeptide backbone
- B. alpha-helical backbone
- C. hydrophobic interactions
- D. sequence of alpha-amino acids.

Answer:



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Section A Passage

1. What is the difference between Ingestion and Digestion?



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2. what type of nutrition is shown by the plants?



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3. The particles of colloidal solution possess electrical charge which is responsible for the stability of these solutions. The charge on colloidal particles arises because of selective adsorption of ions which are common with their own lattice. The presence of charge on colloidal particles can be determined with the help of phenomenon known as electrophoresis. However, when some electrolyte is added, the charge on the particles of dispersed phase gets neutralized and precipitation takes place. This process is also called coagulation. The coagulation is

given by Hardy Schulze rules. According to these rules the ions carrying the charge opposite to that of sol particles are effective and coagulating power of an electrolyte is directly proportional to the fourth power of the valency of the ion. Coagulation can also occur by mutual precipitation, by electrophoresis, by persistent dialysis or by heating or cooling.

What happens to the charge of particles when electrolyte is added ?



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4. Read the given passage and answers following questions :

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Answer the following questions :

Name the other ways by which coagulation can occur.



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electrophoresis, by persistent dialysis or by heating or cooling.

What is Hardy Schulze rule ?



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Section A True False

1. Azo dye test can be used to distinguish aromatic primary amines from aliphatic primary.



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2. The dipole moment of CH_3F is larger than that of CH_3Cl .



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3. Why do aldehydes and ketones undergo nucleophilic addition reaction?



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4. Alcohol are stronger acids than water.

A. True

B. False

C.

D.

Answer:



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5. Deficiency of Vitamin D causes



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Section B Short Answer

1. Why is Copper considered as transition metal ?



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2. Explain

chelate



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3. Explain

ligands



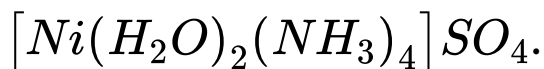
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4. Write the IUPAC name of the $K[Ag(CN)_2]$



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5. Write IUPAC name of



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6. Why Zr and Hf show similar chemical properties ?



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7. Account for the following: Among the halogens F_2 is the strongest oxidising agent.



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8. What is the difference between globular and fibrous protein ?



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9. Find mole fraction of ethanol and water in a sample of rectified spirit which contain 95 % ethanol by mass.



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10. A solution of solute X in benzene boils at $0.126K$ higher than benzene. What is the molality of the solution ?

(K_b for benzene = $2.52 K/m$)



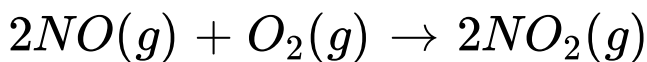
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11. The half-life for radioactive decay of ^{14}C is 5730 years. An archaeological artifact contained wood that has only 80% of the ^{14}C found in living tree. Estimate the age of the sample.



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12. For a reaction



Rate = $k [\text{NO}]^2 [\text{O}_2]$, if the volume of the

reaction vessel is double. What is the rate of reaction.

A. (a) will diminish to $1/4$ of initial value

B. (b) will diminish to $1/8$ of initial value

C. (c) will grow 4 times

D. (d) will grow 8 times

Answer:



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13. Which factor Rate of reaction depends upon ?



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14. What is relation between conductivity and molar conductivity ?



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15. Explain the following :

Iodine is more soluble in KI solution than in water.



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16. Why ICl is more reactive than I_2 ?



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Section C Long Answer Questions

1. How will you prepare Secondary, Tertiary, primary alcohol from Grignard reagent ?

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2. Write the following reactions :

Williamson's synthesis

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3. What are Etard reaction?





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4. Write Aldol condensation reaction.



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5. First order reaction is found to have rate constant, $k = 5.5 \times 10^{-14} \text{ s}^{-1}$. Find the half life to the reaction.



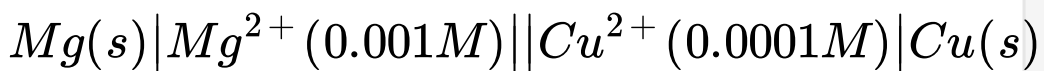
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6. The rate constant for a first order reaction is 90 s^{-1} . How much time will it take to reduce the concentration of the reactant to $\frac{1}{20^{\text{th}}}$ of its initial value?



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7. Write Nernst equation and calculate e.m.f. of the cell at 298 K.



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8. Why is H_2S less acidic than H_2Te ?



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Section D Long Answer Questions Type Ii

1. With the help of resonance show that aryl halides are lesser reactive than alkyl halides.



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2. Haloalkanes react with potassium cyanide (KCN) to give alkyl cyanide, but gives alkyl isocyanide with silver cyanide (Ag CN).



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3. Explain SN_1 mechanism by taking example.



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4. How will you convert:

Chlorobenzene to DDT



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5. How will you convert:

But-1-ene to But-2-ene



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6. How will you convert:

Chlorobenzene to Benzoic acid



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7. Write down following name reaction :

Hunsdiecker reaction



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8. Write the following reactions:

Finkelstein reaction



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9. Solar energy is stored in the plants
in _____ during photosynthesis.



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10. Explain why Cu(I) is diamagnetic while Cu(II) is paramagnetic in nature?



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11. Why are Mn^{2+} compounds more stable than Fe^{2+} compounds towards oxidation to their +3 state ?



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12. What are the main consequences of lanthanoid contraction ?



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13. Explain :Transition elements exhibit variable oxidation states.



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14. Scandium ($z = 21$) is a transition element but zinc ($z = 30$) is not. Explain.



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